

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N01R-01-BAC**      **Big Horse Creek**

Location: Tributary to North Fork New River in NC. This is a loop that flows into VA from NC and back into NC. This segment was previously BHC01A02 and BUR01A02.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The ambient water quality monitoring station 9-BHO017.70 had a 17% exceedence of the fecal coliform bacteria water quality standard.

Big Horse Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>2.99</b>

Sources:

Source Unknown

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## New River Basin

Cause Group Code **N01R-02-BAC** Little Helton Creek

Location: A tributary to Helton Ck. The segment extends from the VA state line upstream.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The ambient water quality monitoring station 9-LUC001.92 had a 17% exceedence of the fecal coliform bacteria water quality standard.

Little Helton Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>3.42</b>

Sources:

Source Unknown

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## New River Basin

Cause Group Code **N02R-01-BAC**      **New River**

Location: The upper mainstem begins at the North Carolina state line at rivermile 189.06 and extends down stream to the Saddle Cr. confluence. Also, the mainstem from the Elk Cr. confluence at rivermile 151.71downstream to rivermile 146.52.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

Fecal Coliform / 5A

The AWQM station, 9-NEW148.23 had a 21% exceedence of the E. coli water quality standard. The AWQM station, 9-NEW181.66 had a 25% exceedence of the fecal coliform water quality standard.

New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>5.19</b>
New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>1.50</b>

Sources:

Source Unknown

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## New River Basin

Cause Group Code **N02R-02-HG**      **New River**

Location: This segment begins at the upper mainstem at the North Carolina state line at river mile 189.06, and extends to the downstream to the Saddle Cr. confluence. This segment also includes the mainstem from the North Carolina line in N04 downstream to the confluence with Peach Bottom Cr. Also the mainstem from the Little River confluence downstream to the Rock Cr. confluence. Also the mainstem from Buddle Br. Downstream to the confluence with Reed Cr.

City / County: Grayson Co.      Wythe Co.

Use(s): Fish Consumption

Cause(s) /  
VA Category: Mercury in Fish Tissue / 5A

Station 9-NEW171.94 showed smallmouth bass, rock bass and carp exceed the TSV for Hg; a second flathead catfish exceeds the VDH level of concern. Station 9-NEW158.40 was monitored for sediment and fish tissue. DDT and Ni are of concern in sediment and Hg exceeded the TSV in several species. 9-NEW117.47 was monitored for sediment and fish tissue in 2004. DDT exceeded the ER-M in sediment and As and Hg were found in the fish tissue.

New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Fish Consumption</b>			
Mercury in Fish Tissue - Total Impaired Size by Water Type:			<b>28.89</b>

Sources:  
Source Unknown

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## New River Basin

Cause Group Code **N02R-03-BAC**      **Wilson Creek**

Location: This segment includes the Wilson Creek mainstem from New River confluence upstream 8.8 miles.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The AWQM station 9-WLS002.57 had a 20% exceedence of the fecal coliform bacteria water quality standard.

Wilson Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>8.81</b>

Sources:

Livestock (Grazing or  
Feeding Operations)

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## New River Basin

Cause Group Code **N03R-01-BAC**      **Fox Creek**

Location: This segment includes the mainstem of Fox Creek from Mill Creek confluence to the New River confluence.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

Designated a natural trout stream. No new data in 2008. The AWQM station, 9-FXC000.84, had a 15 % exceedence of the fecal coliform water quality standard and station 9-FXC003.35 had a 16% exceedence in the fecal coliform water quality standard.

Fox Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>7.67</b>

Sources:

Livestock (Grazing or  
Feeding Operations)

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## New River Basin

Cause Group Code **N04R-02-BAC**      **Little River**

Location: This segment includes the Little River mainstem from NC state line, river mile 5.20, to the confluence at New River.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The AWQM station, 9-LVR001.34, had a 25% exceedence of the fecal coliform water quality standard in the 2004 WQA. The station was moved to 9-NEW002.65 in 2003 and had an 8% exceedence of the E.coli water quality standard.

Little River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>5.24</b>

Sources:

Animal Feeding Operations  
(NPS)

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## New River Basin

Cause Group Code **N04R-03-BAC** Peach Bottom Creek

Location: This segment includes the mainstem from Beaverdam Creek confluence downstream to New River confluence.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

Fecal Coliform / 5A

The AWQM station, 9-PBC001.12, had a 27% exceedence of the E.coli water quality standard. An additional DEQ station at 9-PBC002.65 had fewer E.coli exceedences.

Peach Bottom Creek	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			2.73
Peach Bottom Creek	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Fecal Coliform - Total Impaired Size by Water Type:			2.73

Sources:

Source Unknown



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## New River Basin

Cause Group Code **N04R-07-BAC**      **Saddle Creek**

Location: This segment includes the mainstem from the New River confluence upstream 3.09 miles, west of Independence..

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The AWQM station, 9-SDL000.05, had a 58% exceedence of the E.coli water quality standard.

Saddle Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>3.09</b>

### Sources:

Animal Feeding Operations (NPS)	Livestock (Grazing or Feeding Operations)
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## New River Basin

Cause Group Code **N05R-01-BAC** Elk Creek

Location: This segment includes Elk Creek from the Comers Rock Branch confluence downstream to the New River confluence, including 4.31 miles of Knob Fork, an Elk Creek tributary.

City / County: Grayson Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A Fecal Coliform / 5A

The AWQM station, 9-EKC000.11, had a 67% exceedence of the E.coli water quality standard. Station 9-EKC003.78 had a 29% exceedence of the bacteria water quality standard. Station 9-EKC012.13 had a 75% exceedence of the E. coli water quality standard and station 9- EKC017.51 had a 92% exceedence.

Elk Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			23.92
Elk Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			10.67

Sources:

Animal Feeding Operations (NPS)	Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)
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## New River Basin

Cause Group Code **N05R-01-BEN**      **Elk Creek**

Location: This segment includes the mainstem from the confluence of Comers Rock Branch downstream to Turkey Fork.

City / County: Grayson Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Probabilistic Monitoring station located at 9-EKC013.81 was impaired based on the VSCI score.

Elk Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			<b>8.94</b>

Sources:

Animal Feeding Operations  
(NPS)

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## New River Basin

Cause Group Code **N06R-01-BAC**      **Chestnut Creek**

Location: This segment extends from the confluence with Coal Cr. downstream to river mile 14.27, the Galax raw water intake.

City / County: Carroll Co.      Galax City      Grayson Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 4A

The AWQM station, 9-CST0016.82, had a 32% exceedence of the E.coli water quality standard.

Chestnut Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>3.65</b>

Sources:

Livestock (Grazing or Feeding Operations)      Rural (Residential Areas)

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## New River Basin

Cause Group Code **N06R-01-BEN**      **Chestnut Creek**

Location: This segment includes the mainstem of Chestnut Cr. form the Galax raw water intake downstream to the confluence with New River.

City / County: Carroll Co.      Galax City      Grayson Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

The AWQM station, 9-CST002.64, historically indicated an impairment of the aquatic life use.

Chestnut Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			<b>13.98</b>

Sources:

Impacts from Abandoned      Source Unknown  
Mine Lands (Inactive)

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## New River Basin

Cause Group Code **N07R-01-BAC**      **Crooked Creek**

Location: This segment extends from the headwaters of Crooked Cr. downstream to the backwaters of Byllesby Lake.

City / County: Carroll Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The AWQM station, 9-CRK020.79, had a 33% exceedence of the fecal coliform water quality standard. This segment is designated natural trout waters.

Crooked Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>20.77</b>

Sources:

Source Unknown

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## New River Basin

Cause Group Code **N08R-01-BAC** **New River**

Location: This segment includes Byllesby Reservoir and Mill Creek. It also includes the New River mainstem beginning at Buck Dam, river mile 129.80, downstream to the confluence of Buddle Br. It also includes the main stem of the New River from the confluence with Reed Cr. downstream to the Reed Island Creek confluence.

City / County: Carroll Co. Pulaski Co. Wythe Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

Fecal Coliform / 5A

Byllesby Dam is a run of river hydroelectric generating facility owned by American Electric Power and monitored by DEQ at 9-NEW132.86; no public access is allowed. The AWQM station, 9-NEW107.51, had a 28% exceedence rate of the E. coli water quality standard. One pH exceeded the standard out of 51 measurements. No additional impairments detected. The AWQM station, 9-NEW 127.49 had a 14% exceedence of the E.coli water quality standard and station 9-MRN000.31 had a 33% exceedence of the bacteria water quality standard.

New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>16.99</b>

New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>6.89</b>

Sources:

Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Source Unknown
Unspecified Domestic Waste	Wastes from Pets	Wildlife Other than Waterfowl	

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## New River Basin

Cause Group Code **N08R-03-BAC**      **Shorts Creek unnamed tributary**

Location: This segment includes the lower reach of Shorts Creek and continues until it enters New River at Jackson Ferry. This segment also includes an unnamed tributary to Shorts Cr. that enters at Jackson Ferry and flows west from Rackettown.

City / County: Carroll Co.      Wythe Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The AWQM station, 9-SRT000.12, had a 58% exceedence of the fecal coliform water quality standard.

Shorts Creek unnamed tributary	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>10.47</b>

Sources:

Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)
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## New River Basin

Cause Group Code **N09R-01-BAC**      **Cripple Creek**

Location: This segment begins at the headwaters upstream of US Route 21, downstream to the confluence of Blue Spring Creek. It also includes the mainstem from the confluence with Dry Run , downstream to the Francis Mill Ck confluence as well as the lower segment of the mainstem from the New River confluence upstream to the Dean Branch confluence.

City / County: Smyth Co.      Wythe Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The AWQM station, 9-CPL028.00, had a 17% exceedence of the fecal coliform water quality standard. AWQM station 9-CPL018.47 had a 25% exceedence of the fecal coliform water quality standard and station 9-CPL001.03 had a 17% exceedence.

Cripple Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>14.33</b>

Sources:

Animal Feeding Operations (NPS)	Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)
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## New River Basin

Cause Group Code **N09R-03-BAC**      **Slate Spring Branch**

Location: This segment includes Slate Spring Branch from the Cripple Cr confluence up stream to the headwaters.

City / County: Wythe Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The AWQM station, 9-SPB000.10, had a 75% exceedence of the fecal coliform water quality standard.

Slate Spring Branch	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>5.90</b>

Sources:

Grazing in Riparian or  
Shoreline Zones

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## New River Basin

Cause Group Code **N10L-01-DO** Rural Retreat Lake

Location: This segment includes the Rural Retreat Lake in Wythe County, headwaters of South Fork Reed Creek.

City / County: Wythe Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

Station 9-XLB000.20, in the lacustrine zone has 1/20 DO excursions.9-XBL001.02 has 22% (5/23) DO exceedences.9-XBC000.98 has 24% (7/29) DO exceedences.9-XBC000.98 has 24% (7/29) DO exceedences.9-XBC000.98 has 24% (7/29) DO exceedences.9-XBL001.02 has 22% (5/23) DO exceedences.9-XBC000.98 has 24% (7/29) DO exceedences.

The following stations were not stratified:  
9-XBL001.02 has 22% (5/23) DO exceedences.  
9-XBC000.98 has 24% (7/29) DO exceedences.

Rural Retreat Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Oxygen, Dissolved - Total Impaired Size by Water Type:			85.46

Sources:

Livestock (Grazing or  
Feeding Operations)

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## New River Basin

Cause Group Code **N10L-01-PH** Rural Retreat Lake

Location: This segment includes the Rural Retreat Lake in Wythe County, headwaters of South Fork Reed Creek.

City / County: Wythe Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: pH / 4C

Station 9-XBL00.20 had a 19% exceedence of the pH water quality criteria and stations 9-XBL000.98 and 9-XBL001.02 had 24% and 30% exceedences of the pH water quality criteria.

Rural Retreat Lake	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
pH - Total Impaired Size by Water Type:			85.46

### Sources:

- Natural Conditions - Water
- Quality Standards Use
- Attainability Analyses
- Needed

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## New River Basin

Cause Group Code **N10R-02-BAC**      **Mill Creek**

Location: This segment includes South Fork Reed Creek from river mile 6.8 downstream to the Reed Creek confluence as well as the mainstem of Mill Creek to the confluence with Reed Creek.

City / County: Wythe Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The AWQM station, 9-MCE000.37, had a 50% exceedence of the E.coli water quality standard. Station 9- RSF000.08 had a 67% exceedence of the E.coli water quality standard.

Mill Creek	Estuary	Reservoir	River
<b>Recreation</b>	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			<b>12.90</b>

Sources:

Animal Feeding Operations (NPS)	Livestock (Grazing or Feeding Operations)
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## New River Basin

Cause Group Code **N10R-03-BAC**      **Stony Fork**

Location: This segment includes the headwaters downstream to the Reed Creek confluence.

City / County: Wythe Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The AWQM station, 9-SFK000.28, had a 58% exceedence of the E. coli water quality standard.

Stony Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>6.66</b>

Sources:

Livestock (Grazing or  
Feeding Operations)

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## New River Basin

Cause Group Code **N10R-04-BAC**      **Tate Run**

Location: This segment begins at the Stuffle Run confluence and extends downstream to Reed Creek.

City / County: Wythe Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The AWQM station, 9-TAT000.46, had a 50% exceedence of the E. coli water quality standard.

Tate Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>0.52</b>

Sources:

Livestock (Grazing or  
Feeding Operations)

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## New River Basin

Cause Group Code **N11R-01-BAC**      **Reed Creek**

Location: This segment begins at the Gullion Fork confluence and extends downstream to the Venrick Run confluence. It also includes the lower mainstem of Reed Creek from its confluence with Muskrat Branch downstream to its confluence with the New River.

City / County: Wythe Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

Fecal Coliform / 5A

The AWQM station, 9-RDC0046.65, had a 25% exceedence of the E.coli water quality standard. Station 9-RDC038.01 had a 55% exceedence of the E.coli standard and station 90RDC033.78 had a 67% exceedence. Stations 9-RDC009.00 and 9-RDC000.79 both had 17% exceedences of the E.coli water quality standard.

Reed Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			37.84
Reed Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			1.46

Sources:

Animal Feeding Operations (NPS)	Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)
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## New River Basin

Cause Group Code **N11R-02-BAC**      **Miller Creek**

Location: This segment includes the mainstem from the Beaverdam confluence at Max Meadows downstream to Reed Creek.

City / County: Wythe Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The AWQM station, 9-MER000.09, had a 75% exceedence of the E.coli water quality standard.

Miller Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>0.42</b>

Sources:

Source Unknown

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## New River Basin

Cause Group Code **N12R-01-BAC** Cove Creek

Location: This segment includes the lower Cove Creek mainstem from St. Lukes Fork downstream to the confluence with Reed Creek.

City / County: Wythe Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The AWQM station, 9-CVR003.88, had a 58% exceedence of the E.coli water quality standard.

Cove Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>9.10</b>

Sources:

Livestock (Grazing or  
Feeding Operations)

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## New River Basin

Cause Group Code **N13R-01-BAC**      **Big Reed Island Creek**

Location: This segment begins at the headwaters of Big Reed Island Creek and continues downstream to the confluence with Pine Creek.

City / County: Carroll Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The AWQM station located at 9-RIC049.29 had a 44% exceedence of the E.coli water quality standard.

Big Reed Island Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>19.16</b>

Sources:

Source Unknown

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## New River Basin

Cause Group Code **N13R-01-BEN**      **Big Reed Island Creek**

Location: This segment begins at the headwaters of Big Reed Island Creek and continues downstream to the confluence with Pine Creek.

City / County: Carroll Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Probabilistic Monitoring station located at 9-RIC051.80 was impaired based on the VSCI score.

Big Reed Island Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			<b>19.16</b>

Sources:

Source Unknown

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## New River Basin

Cause Group Code **N14R-01-BAC**      **Big Reed Island Creek**

Location: This segment includes the mainstem of Big Reed Island Creek from the confluence of Snake Cr. downstream to the confluence with Bobbitt Creek.

City / County: Carroll Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The AWQM station, 9-RIC049.29, had a 44% exceedence of the fecal coliform water quality standard.

Big Reed Island Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>7.49</b>

Sources:

Source Unknown

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## New River Basin

Cause Group Code **N14R-02-BAC** Greasy Creek

Location: This segment begins at the Carroll/ Floyd county line and continues downstream to the confluence with Big Reed Island Creek.

City / County: Floyd Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The AWQM station located at 9-GSC000.03 had a 33% exceedence of the E.coli water quality standard.

Greasy Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>13.12</b>

### Sources:

Grazing in Riparian or  
Shoreline Zones

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N15R-01-BAC**

### Little Reed Island Creek

Location: This segment begins at the East Fork of Little Reed Island Cr. 5 miles above the Hillsville water intake and extends downstream to the water intake. It also includes the segment beginning approximately 1 mile below the Hillsville water intake and continuing downstream to the confluence with Big Reed Island Creek.

City / County: Carroll Co.

Pulaski Co.

Wythe Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

AWQM station 9-LRI001.62 had a 44% exceedence of the E.coli water quality standard, station 9-LRI017.64 had a 55% exceedence, station 9-LRI023.48 had a 66% exceedence, and station 9-LRI031.58 had a 37% exceedence of the E.coli water quality standard.

Little Reed Island Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**33.94**

#### Sources:

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Source Unknown

Unspecified Domestic Waste

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N15R-01-TEMP** Little Reed Island Creek

Location: This segment begins approximately 1 mile below the Hillsville water intake and continues downstream to the Reed Island Creek confluence.

City / County: Carroll Co. Pulaski Co. Wythe Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Temperature, water / 5A

AWQM station 9-LRI001.62 had a 22% exceedence of the temperature water quality criteria and station 9-LRI017.64 had a 25% exceedence of the temp. criteria.

Little Reed Island Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Temperature, water - Total Impaired Size by Water Type:			<b>29.02</b>

Sources:

Source Unknown



# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N16L-01-DO**      **Claytor Lake - New River**

Location: Claytor Lake - New River mainstem from the mouth of Peak Creek downstream to Claytor Dam (Dublin and Radford South Quads).

City / County: Pulaski Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

A portion of Claytor Lake, 2,2045.60 acres, is originally 2002 303(d) Listed for excursions of the Class IV Water Quality Standard (WQS) dissolved oxygen minimum criterion of 4.0 mg/l. The impairment is categorized as natural (4C) as exceedences occur in the hypolimnion due to thermal stratification. Virginia's Lake Nutrient Criteria (9 VAC 25-260-187) states the nutrient criteria apply only in the epilimnion for lacustrine waters during thermal stratification for control of nutrient enrichment. The Draft Implementation Guidance memo outlines criteria for evaluating dissolved oxygen during periods of thermal stratification. Data from the following stations find the waters not supporting the Aquatic Life Use in the epilimnion from dissolved oxygen exceedences of the minimum 4.0 mg/l criterion.

Note: 2002 New River stream flows as measured at the US Geological Survey station 03168000 in Allisonia (upstream of Claytor Lake) records 39 total days of daily mean average flows below the 7Q10 of 722 cubic feet per second (cfs) in the June 22, 2002 through September 26, 2002 period. 24 of these days are recorded in August. Downstream station 03171000 at Radford records 47 total days below the 7Q10 of 912 cfs with 24 days in August and the remainder in September.

9-NEW092.66- (Dublin Water Works) 154 exceed from 656 total observations.

9-NEW089.34- (Line Between Beach and Inlet) 121 exceed from 637 total observations.

9-NEW087.14- (Under Power Lines above Dam) 115 exceed from 695 total observations.

Claytor Lake - New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Oxygen, Dissolved - Total Impaired Size by Water Type:		<b>2,045.60</b>	

### Sources:

Natural Conditions - Water  
Quality Standards Use  
Attainability Analyses  
Needed

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N16L-02-DO**

**Claytor Lake - Peak Creek**

Location: Peak Creek from its confluence with the New River upstream to the end of the WQS public water supply (PWS) designation (Dublin Quad).

City / County: Pulaski Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Oxygen, Dissolved / 4C

A portion of Claytor Lake in the Peak Creek (Upper) (216.86 acres) arm is originally 2002 303(d) Listed for excursions of the Class IV Water Quality Standard (WQS) dissolved oxygen minimum criterion of 4.0 mg/l. The impairment is categorized as natural (4C) as exceedences occur in the hypolimnion due to thermal stratification. Virginia's Lake Nutrient Criteria (9 VAC 25-260-187) states the nutrient criteria apply only in the epilimnion for lacustrine waters during thermal stratification for control of nutrient enrichment. The Draft Implementation Guidance memo outlines criteria for evaluating dissolved oxygen during periods of thermal stratification. Data from station 9-PKC000.00 finds the waters not supporting the Aquatic Life Use in the epilimnion from dissolved oxygen exceedences of the minimum 4.0 mg/l criterion.

Note: 2002 New River stream flows as measured at the US Geological Survey station 03168000 in Allisonia (upstream of Claytor Lake) records 39 total days of daily mean average flows below the 7Q10 of 722 cubic feet per second (cfs) in the June 22, 2002 through September 26, 2002 period. 24 of these days are recorded in August. Downstream station 03171000 at Radford records 47 total days below the 7Q10 of 912 cfs with 24 days in August and the remainder in September.

9-PKC000.00 (Mouth of Peak Cr.)- 131 exceed from 618 total observations.

Claytor Lake - Peak Creek

**Aquatic Life**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Oxygen, Dissolved - Total Impaired Size by Water Type:

**216.86**

### Sources:

Natural Conditions - Water  
Quality Standards Use  
Attainability Analyses  
Needed

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N17R-01-BAC**

### Peak Creek

Location: The bacteria impairment extends from the mouth of Hogan Creek downstream to the backwaters of Claytor Lake.

City / County: Pulaski Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 4A

The Peak Creek Bacteria TMDL Study is complete with US EPA approval on 8/30/2004 [Fed. ID 7824] and SWCB approval on 12/02/2004. These waters are 1996 303(d) Listed originally for fecal coliform bacteria for 3.53 miles (4.65 mi. pre-NHD) and extended upstream in subsequent assessment cycles for a total 6.50 miles. The Recreational Use remains impaired. The TMDL Study can be viewed at <http://www.deq.virginia.gov>. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-PKC011.11 (Commerce St. Bridge) 2008 Cycle E.coli data reveal two of 12 samples in excess of the 235 cfu/100 ml instantaneous criterion. Both exceedences are 500 and 640 cfu/100 ml. E.coli results in 2006 find two of seven samples in excess of the 235 cfu/100 ml criterion; exceedences are the same as in 2008.

9-PKC009.29 (Near Radio Tower) E.coli exceeds the instantaneous criterion in 12 of 23 samples in 2008. Exceeding values range from 240 cfu/100 ml. to 10,000. E.coli exceeds the instantaneous criterion in 11 of 18 samples in 2006 with the same range of exceedence.

Peak Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**6.50**

#### Sources:

Livestock (Grazing or  
Feeding Operations)

Municipal (Urbanized High  
Density Area)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Sanitary Sewer Overflows  
(Collection System Failures)

Unspecified Domestic Waste

Wastes from Pets

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N17R-01-BEN**

### Peak Creek

Location: Benthic impaired waters begin downstream of the Washington Ave. Bridge (~0.20 miles) on downstream to the inundation of Peak Creek in Claytor Lake.

City / County: Pulaski Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

The Peak Creek General Standard - Benthic (Metals) TMDL Study is complete with US EPA approval on 8/30/2004 [FED ID 7823/7822] and SWCB approval on 12/02/2004. The TMDL Study finds copper (Cu) and zinc (Zn) as stressors for 3.53 miles to this 1996 (4.65 mi. pre-NHD) Listed benthic impairment. The TMDL allocations require reductions in zinc and copper from non-point sources.

9-PKC009.29 (Near Radio Tower) Bio 'MI' Four Virginia Stream Condition Index (VSCI) surveys (2002, 2003 & 2006) with an average score of 47.9. The spring 2003 sample had high diversity and numbers of mayflies compared to other samples collected in this assessment period. High flows in 2003 potentially contributed to these higher numbers. The samples with low scores show low diversity of taxa and several pollution tolerant taxa dominating the samples. Filter, collector and scraper feeding taxa were the dominant functional feeding groups. Habitat in this reach has been impacted by loss of riparian vegetation and in stream cover, and increased sedimentation.

9-PKC007.80 (Rt. 99 Bridge) Bio 'IM' Four VSCI surveys (2002, 2003 & 2006) with an average score of 47.6. All samples reveal several pollution tolerant taxa are dominant. Habitat in this reach has been impacted by the loss of riparian vegetation.

Peak Creek

**Aquatic Life**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:

**3.53**

Sources:

Contaminated Sediments

Industrial/Commercial Site  
Stormwater Discharge  
(Permitted)

Sediment Resuspension  
(Contaminated Sediment)

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N17R-01-CU**      **Peak Creek**

Location: Impairment begins downstream of the Washington Ave. Bridge (~0.20 miles) on downstream to the inundation of Peak Creek in Claytor Lake.

City / County: Pulaski Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: Copper / 4A

The Peak Creek General Standard - Benthic (Metals) TMDL Study is complete with US EPA approval on 8/30/2004 [FED ID 7823/7822] and SWCB approval on 12/02/2004.

The TMDL Study finds cooper (Cu) and zinc (Zn) as stressors for 3.53 miles to this 1996 (4.65 mi. pre-NHD) Listed benthic impairment. The likelihood of dissolved metals reaching acute levels of toxicity in the water column during low-flow and storm events was assessed. The impact of point source discharges of Cu and Zn during low flow was analyzed and determined that the concentrations of Cu and Zn would not likely approach the acute criteria for aquatic life (i.e., 13 ug/l and 120 ug/l for Cu and Zn, respectively). It was anticipated that acidic runoff from historic industrial sites may leach significant levels of dissolved Cu and Zn to the stream during storm events. The weight of evidence at this time, including site observations and collected data, points to soils at or from the Allied Signal site as the main source of contamination.

Peak Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Copper - Total Impaired Size by Water Type:			3.53

Sources:

Contaminated Sediments	Industrial/Commercial Site Stormwater Discharge (Permitted)	Sediment Resuspension (Contaminated Sediment)
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N17R-01-ZN** **Peak Creek**

Location: Impairment begins downstream of the Washington Ave. Bridge (~0.20 miles) on downstream to the inundation of Peak Creek in Claytor Lake.

City / County: Pulaski Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: Zinc / 4A

The Peak Creek General Standard - Benthic (Metals) TMDL Study is complete with US EPA approval on 8/30/2004 [FED ID 7823/7822] and SWCB approval on 12/02/2004.

The TMDL Study finds cooper (Cu) and zinc (Zn) as stressors for 3.53 miles to this 1996 (4.65 mi. pre-NHD) Listed benthic impairment. The likelihood of dissolved metals reaching acute levels of toxicity in the water column during low-flow and storm events was assessed. The impact of point source discharges of Cu and Zn during low flow was analyzed and determined that the concentrations of Cu and Zn would not likely approach the acute criteria for aquatic life (i.e., 13 ug/l and 120 ug/l for Cu and Zn, respectively). It was anticipated that acidic runoff from historic industrial sites may leach significant levels of dissolved Cu and Zn to the stream during storm events. The weight of evidence at this time, including site observations and collected data, points to soils at or from the Allied Signal site as the main source of contamination.

Peak Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Zinc - Total Impaired Size by Water Type:			3.53

Sources:

Contaminated Sediments	Industrial/Commercial Site Stormwater Discharge (Permitted)	Sediment Resuspension (Contaminated Sediment)
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N18R-01-BAC**

**Crab Creek**

Location: The upstream limit is the Crab Creek headwaters on the Irono Quad. The downstream limit is at the Crab Creek mouth on the New River about 1.5 mi upstream of the Rt. 114 Bridge and downstream of Radford, Virginia (Riner, Blacksburg and Radford North Quads).

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 4A

The Crab Creek Bacteria TMDL Study is complete and US EPA approved on 8/10/2004 [FED ID 18594 / 23405] and SWCB approved 12/02/2004 (formerly VAW-N18R-01). The waters are initially 303(d) Listed with the 2002 Assessment for fecal coliform (FC) bacteria causing non-support of the Recreational Use for 12.01 miles. The TMDL Study can be viewed at <http://www.deq.virginia.gov>. Escherichia coli (E.coli) replaces fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-CBC009.81 (Rt. 111 Bridge) The 2008 assessment finds six of 18 E.coli samples exceed the WQS 235 cfu/100 ml instantaneous criterion. Exceeding values range from 400 to greater than 2000 cfu/100 ml. Six of 15 E.coli samples exceed the WQS 235 cfu/100 ml instantaneous criterion in 2006 with the same range of exceedence.

9-CBC006.35 (Rt. 661 Bridge) There are no additional data beyond December 2006 where E.coli exceeds the WQS instantaneous criterion of 235 cfu/100 ml in eight of 16 observations. Exceeding values range from 250 to >800 cfu/100 ml. E.coli data within the 2008 data window are three of six exceeding values. This station is located upstream of the former Christiansburg outfall.

9-CBC004.38 (Rt. 660 Bridge) E.coli exceeds the 235 cfu/100 ml WQS instantaneous criterion in 16 of 33 observations within the 2008 data window. Exceeding values range from 280 to greater than 800 cfu/100 ml. 2006 E.coli results find 22 of 40 observations in excess of the instantaneous criterion and the same range of exceedence.

9-CBC001.00 (Route 663 Bridge near Walton) Nine of 27 E.coli samples exceed the instantaneous criterion ranging from 260 to greater than 800 cfu/100 ml in 2008. The 2006 Integrated Report (IR) finds nine of 23 E.coli samples exceed the instantaneous criterion. The range of exceeding values is the same as in 2008.

Crab Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**12.01**

### Sources:

Discharges from Municipal  
Separate Storm Sewer  
Systems (MS4)

Livestock (Grazing or  
Feeding Operations)

Municipal (Urbanized High  
Density Area)

Unspecified Domestic Waste

Wastes from Pets

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N18R-01-BEN**

**Crab Creek**

Location: The upstream limit is the Crab Creek headwaters on the Ironto Quad. The downstream limit is at the Crab Creek mouth on the New River about 1.5 mi upstream of the Rt. 114 Bridge and downstream of Radford, Virginia (Riner, Blacksburg and Radford North Quads).

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

The 1996 303(d) Listing Crab Creek General Standard (Benthic) TMDL Study is complete and US EPA approved 8/10/2004 [Sediment- FED ID 18595 / 23406]. The SWCB approved the study on 12/02/2004 (formerly VAW-N18R-01). The waters remain impaired for the aquatic life use for 12.01 miles.

Natural seasonal effects are noted at the sites below. Pollution tolerant families are dominant in both seasons, the midge family Chironomidae in spring and the caddisfly family Hydropsychidae in fall. Beginning in spring 2002, Toms Creek was determined to be a more suitable ecoregion reference site because of similarity in size and watershed characteristics than the previous reference site (Sinking Creek, 9-SNK012.06). Agricultural and urban NPS runoff impact Crab Creek. Habitat impacts to this reach result in fine sediment deposition causing stream substrates to become embedded from bank erosion, altered hydrology, and degraded riparian buffers due to residences, roads, and railroad tracks. An apparent nutrient rich environment all contribute to the benthic impairment.

9-CBC006.35- Bio 'MI'; moderate impairment. Five RBP II surveys scoring- 2000 spring 47.83, fall- 34.78; 2002 spring- 52.17, fall- 59.09 and 2003 spring- 65.22. Seasonal 5 year Spring score 55.07 and Fall score 46.94.

9-CBC004.38- Bio 'MI'; moderate impairment. Five RBP II surveys scoring- 2000 spring- 39.13, fall- 34.78; 2002 spring- 65.22, fall- 59.09 and 2003 spring- 69.57. Seasonal 5 year Spring score 57.97; Fall score 46.94.

9-CBC001.00- Bio 'IM' Three Virginia Stream Condition Index (VSCI) surveys (2002-2003) with an average score of 58.43. Pollution tolerant families are dominant in spring and fall, the midge family Chironomidae in spring and the caddisfly family Hydropsychidae in fall. Impacts to the benthic community and stream habitat are the same as noted at 9-CBC004.38.

Crab Creek

**Aquatic Life**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:

**12.01**

### Sources:

Discharges from Municipal  
Separate Storm Sewer  
Systems (MS4)

Loss of Riparian Habitat

Municipal (Urbanized High  
Density Area)

Post-development Erosion  
and Sedimentation

Sediment Resuspension  
(Clean Sediment)

Sediment Resuspension  
(Contaminated Sediment)

Streambank  
Modifications/destabilization



# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N18R-02-BAC**      **Connellys Run**

Location: Bacteria impairment begins near the headwaters of Connellys Run at an unnamed tributary (37°07'04" / 80°32'16") downstream to its mouth on the New River.

City / County: Radford City

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

Fecal coliform (FC) bacteria excursions of the WQS instantaneous criterion cause non-support of the Recreational Use for 2.75 miles. The impairment for the 2004 303(d) Listed water remains. Future assessment and 303(d) Listings will replace fecal coliform with Escherichia coli (E.coli) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-CNL000.01 (Bissett Park Bridge, Radford) There are no additional data beyond the 2006 Integrated Report (IR). FC exceeds the WQS instantaneous criterion of 400 cfu/100 ml in three of 11 observations. The range of excursions is from 500 to 1900 cfu/100 ml.

Connellys Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>2.75</b>

Sources:

Livestock (Grazing or Feeding Operations)	Municipal (Urbanized High Density Area)	Unspecified Domestic Waste	Wildlife Other than Waterfowl
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N18R-03-BAC**

### Plum Creek

Location: The upstream limit is the headwaters of Plum Creek extending downstream to its mouth on the New River.

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /

VA Category: Fecal Coliform / 5A

This 2004 303(d) Listed water extends for 4.51 miles on Plum Creek. Future assessment and 303(d) Listings will replace fecal coliform (FC) with Escherichia coli (E.coli) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-PLM000.60 (Rt. 11 just above the mouth of Plum Creek) There are no additional data beyond the 2006 Integrated Report (IR) where fecal coliform (FC) exceeds the WQS 400 cfu/100 ml instantaneous criterion in two of 11 observations. Values in excess of the standard are 1100 and 1500 cfu/100 ml.

Plum Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Fecal Coliform - Total Impaired Size by Water Type:

**4.51**

### Sources:

Livestock (Grazing or  
Feeding Operations)

Municipal (Urbanized High  
Density Area)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N19R-01-BAC** Little River (Upper)

Location: The bacteria impaired waters begin in the headwaters of Little River and extend downstream to the mouth of the West Fork of Little River (Check, Endicott and Floyd Quads).

City / County: Floyd Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

The original 2004 10.91 mile fecal coliform (FC) bacteria 303(d) Listing is extended downstream 8.60 miles and upstream 14.04 miles based on Escherichia coli (E.coli) bacteria collections within the 2006 data window. Both the 2008 and 2006 Integrated Reports (IR) record 33.55 miles impaired for failure to support the Recreational Use. Escherichia coli (E.coli) replaces fecal coliform as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-LRV069.88 (Rt. 641 Bridge) Four of 12 E.coli observations exceed the 235 cfu/100 ml instantaneous criterion within the 2008 data window. Values in excess of the criterion range from 500 to 1500 cfu/100 ml. The 2006 IR reports three of nine E.coli observations exceed the instantaneous criterion. Values in excess of the criterion range from 350 to 1500 cfu/100 ml.

9-LRV065.57 (Rt. 639 Bridge) The 2008 assessment finds E.coli exceeds the instantaneous criterion in four of 11 samples. Exceeding values range from 430 to 800 cfu/100 ml. 2006 E.coli exceedences are three of nine samples with the same range of exceedence as in 2008.

9-LRV056.74 (Rt. 221 Bridge) Four of 12 E.coli observations exceed the 235 cfu/100 ml instantaneous criterion in 2008. Maximum values exceeding the criterion range from 400 cfu/100 ml to greater than 2000. The 2006 assessment finds three of nine E.coli observations exceed the instantaneous criterion with the same range of exceedence as 2008. The original 2004 303(d) Listing is based on exceedence of the fecal coliform bacteria 400 cfu/100 ml instantaneous criterion where two observations exceed from 11 samples. 2004 IR FC values exceeding the standard are 500 and 1400 cfu/100 ml.

9-LRV044.49 (Rt. 615 Bridge) E.coli exceedences are found in three of 11 observations in 2008. Exceeding values range from 380 to greater than 2000 cfu/100 ml. Two of eight E.coli exceedences are found in 2006 at 380 and 450 cfu/100 ml.

Little River (Upper)

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**33.55**

### Sources:

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N19R-01-TEMP**      **Little River**

Location: Little River mainstem waters from the mouth of the West Fork Little River upstream to the mouth of Payne Creek.

City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Temperature, water / 5C

The 303(d) Listed natural trout water temperature impairment is extended both upstream and downstream in 2008 from the original 10.91 mile impairment defined by station 9-LRV056.74 in 2002. The upstream extension is based on station 9-LRV065.57 for an additional 14.04 miles. And the downstream extension on station 9-LRV044.49 for an additional 8.60 miles. Total non-support of the Aquatic Life Use is 33.55 miles.

9-LRV065.57- (Rt. 639 Bridge) Temperature exceedences are found in two of 12 measurements in 2008. Each are in excess of the WQS Class VI natural trout water criterion of 20°C. Excursions are both at 20.4 °C on 8/02/2004 and 6/29/2005.

9-LRV056.74- (Rt. 221 Bridge) Temperature exceedences of the natural trout water criterion occur in two of 12 measurements. The excursions occur on 8/02/2004 at 21.4 °C and 6/29/2005 at 21.3°C within the 2008 data window. The 2006 Integrated Report (IR) records two of 12 temperature measurements exceeding the criterion with excursions in May of 2000 (at 21.2°C) and August of 2004 (at 21.4 °C). Two of 11 measurements exceed in 2004. The exceedences occur in July 1998 (at 25.7°C) and May of 2000 (at 21.2°C). The 2002 assessment found temperature exceeds in three of 16 observations occurring in July 1997 and 1998 (2) and one in May of 2000.

9-LRV044.49- (Rt. 615 Bridge) The 2008 assessment finds two temperature measurements exceed the 20 °C natural trout criterion at 23.3 °C (8/02/2004) and 22.8°C (6/29/2005) from 12 measurements.

Little River	Estuary	Reservoir	River
Aquatic Life	(Sq. Miles)	(Acres)	(Miles)
Temperature, water - Total Impaired Size by Water Type:			33.55

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N19R-02-BAC**

**Meadow Run**

Location: Meadow Run (MDR) from its headwaters downstream to its confluence with Little River.

City / County: Floyd Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

The Recreational Use remains impaired for 3.70 miles for the original 2006 303(d) Listing. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-MDR000.34 (Rt. 641 Bridge) Four of 12 E.coli samples exceed the 235 cfu/100 ml instantaneous criterion in 2008. Exceeding values range from 630 to greater than 2000 cfu/100 ml. The 2006 range of exceedence is the same from three of nine E.coli observations.

Meadow Run

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**3.70**

Sources:

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N19R-02-BEN** Meadow Run

Location: Meadow Run (MDR) from its headwaters downstream to its confluence with Little River.

City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2008 assessment finds the Aquatic Life Use impaired for 3.70 miles from the results of Virginia Stream Condition Index (VSCI) surveys.

9-MDR003.60 (Off Rt. 610) Bio 'IM' Two 2001 VSCI surveys with an average score of 45.8. The benthic community was considerably better in the fall (score 60.6) although taxa richness and percentage of stoneflies-caddisflies (Hydropsychidae) were still low. The station is located downstream and adjacent to residences with mowed lawns, a driveway and a horse pasture that impact bank vegetation and the riparian zone in this reach. The stream substrate is impacted by sediment deposition.

Meadow Run	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Aquatic Life			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			3.70

Sources:

Loss of Riparian Habitat	Sediment Resuspension (Clean Sediment)	Streambank Modifications/destabilization
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N19R-03-BAC**

**Pine Creek**

Location: Pine Creek mainstem from its mouth on Little River upstream to the impounding structure of a pond.

City / County: Floyd Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

The waters remain impaired for non-support of the Recreational Use. Bacteria exceedences cause the 2006 303(d) Listing for 3.68 miles. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-PNC000.69 (Rt. 682 Bridge) E.coli exceed the 235 cfu/100 ml instantaneous criterion in three of 11 samples in 2008. Excursions range from 380 to 1000 cfu/100 ml. 2006 E.coli exceedences are three of eight with the same range of exceedence found in 2008.

Pine Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**3.68**

Sources:

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N19R-03-TEMP**      **Pine Creek**

Location: Pine Creek mainstem from its mouth on Little River upstream to the impounding structure of a pond.

City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Temperature, water / 5C

The 2008 assessment finds the Aquatic Life Use is not supported due to temperature exceedences of the WQS Class VI natural trout water criterion. The impairment extends 3.68 miles.

9-PNC000.69- Two of 12 temperature measurements exceed the natural trout water criterion of 20°C. Each excursion is 20.5 °C on 8/02/2004 and 21.3°C on 6/29/2005.

Pine Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Temperature, water - Total Impaired Size by Water Type:			<b>3.68</b>

Sources:

Source Unknown



# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N20R-01-BAC**

**Dodd Creek and West Fork Dodd Creek**

Location: Dodd Creek: The upper limit extends from the junction of Routes 710 and 714 downstream to the Dodd Creek mouth on the West Fork Little River (Woolwine and Floyd Quads).

West Fork Dodd Creek and unnamed tributary XDC: Mainstem extends from its confluence with Dodd Creek upstream to the mouth of an unnamed tributary (XDC). The mouth of the unnamed tributary is located at 36°52'33" / 80°19'43".

City / County: Floyd Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 4A

Fecal Coliform / 4A

The Dodd Creek Bacteria TMDL Study is complete and US EPA approved on 12/11/2002 [FED ID 9456 / 23407] and SWCB approved on 6/17/2004 (formerly VAW-N20R-01). The Bacteria Implementation Plan is complete (7/2007) and awaits SWCB approval. The Bacteria TMDL Study can be viewed at <http://www.deq.virginia.gov>. The waters were originally 1998 303(d) listed based on the former fecal coliform (FC) WQS instantaneous criterion of 1000 cfu/100 ml and 200 geometric mean (8.47 miles). Additional bacteria sampling above and below the 1998 303(d) Dodd Creek Impaired waters have extended the original size. Tributary additions include the West Fork of Dodd Creek (6.45 miles) and an unnamed tributary (XDC) in 2002 to the West Fork (0.49 miles). Escherichia coli (E.coli) replaces fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

Dodd Creek:

9-DDD004.64 (Route 720 Bridge above Floyd STP) E.coli exceeds the 235 cfu/100 ml instantaneous criterion in two of nine observations at 280 and 1200 cfu/100 ml. The 2004 IR reports three of 11 FC samples exceed the WQS 400 cfu/100 ml instantaneous criterion.

9-DDD002.62- (Route 696 Bridge below Floyd STP) Six of nine E.coli samples exceed the instantaneous criterion. Values in excess of the criterion range from 250 cfu/100 ml to greater than 2000.

9-DDD001.00- (Route 8 Bridge below Floyd STP) E.coli exceeds the instantaneous criterion in two of nine samples. Exceedences are 350 and 1900 cfu/100 ml.

9-DDD008.20- No additional data beyond 2004 Integrated Report (IR). The 2004 IR reports FC exceedences of the 400 cfu/100 ml WQS instantaneous criterion occur in 3 of 3 observations (max. 1700); one FC geometric mean calculation results in the exceedence of the 200 cfu/100 ml standard. No E.coli samples collected.

West Fork Dodd Creek:

9-DDW004.02 (Rt. 714 Bridge) No additional data beyond the 2004 IR that reports FC exceedences of the WQS 400 cfu/100 ml instantaneous criterion occur in 4 of 4 observations (max. 9200). Additionally the FC geometric mean exceeds in one calculation.

Unnamed Tributary XDC: (The unnamed tributary portion extends from just upstream of the Rt. 8 crossing (36°52'18" / 080°20'03") downstream to its confluence with the West Fork Dodd Creek (36°52'33" / 080°19'43" - Floyd Quad.)

9-XDC000.48 (Rt. 807 Bridge) No additional data beyond the 2004 IR. FC exceedences of the WQS 400 cfu/100 ml instantaneous criterion occur in 4 of 4 observations (max. 6400). Additionally the geometric mean exceeds in one calculation.

Dodd Creek and West Fork Dodd Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**6.28**

Dodd Creek and West Fork Dodd Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Fecal Coliform - Total Impaired Size by Water Type:

**9.13**

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

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## New River Basin

Sources:

Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Unspecified Domestic Waste	Wet Weather Discharges (Non-Point Source)
Wildlife Other than Waterfowl			

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N20R-01-TEMP**      **West Fork Dodd Creek**

Location: West Fork Dodd Creek mainstem from its confluence with Dodd Creek upstream to the mouth of an unnamed tributary (XDC). The mouth of the unnamed tributary is located @36°52'33" / 80°19'43".

City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Temperature, water / 5C

9-DDW000.02 (Rt. 807 Bridge) Temperature exceeds the 20° natural trout criterion in 2 of 2 measurements. Exceeding values are 23.3°C on 7/28/99 and 20.1°C on 6/28/00. The 2002 Temperature 303(d) Listing remains.

West Fork Dodd Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Temperature, water - Total Impaired Size by Water Type:			<b>1.17</b>

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N20R-02-TEMP**      **Dodd Creek**

Location: Dodd Creek from it's confluence with the West Fork Little River upstream to the mouth of the West Fork of Dodd Creek  
City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: Temperature, water / 5C

The 2008 assessment finds the Aquatic Life Use is impaired for 6.28 miles due to temperature exceedences for these Class V (21°C) stockable trout waters.

Dodd Creek (Lower): Length 3.78 miles.  
9-DDD002.62- (Route 696 Bridge below Floyd STP) The 21°C stockable trout water criterion for these Class V waters is exceeded in two of nine measurements at 22.2°C on 8/10/2005 and 21.6°C on 8/14/2006.

9-DDD001.00- (Route 8 Bridge below Floyd STP) Two of nine temperature measurements exceed the stockable trout water criterion at 22.0 on 8/10/2005 and 22.1°C on 8/14/2006.

Dodd Creek (Upper) Length 2.50 miles.  
Single measurement exceedences of the Class V criterion occur upstream. Station 9-DDD004.64 records one temperature exceedence from nine measurements at 22.4°C on 8/10/2005 within the 2008 data window.

Historically stations 9-DDD006.27 (Rt. 8 Bridge), 9-DDD004.75 (Rt. 720 Bridge) and 9-DDD004.64 (Route 720 Bridge above Floyd STP) have recorded temperature excursions upstream albeit in drought conditions. 9-DDD006.27 21.6°C on 7/28/99 - One of two Temp measurements exceed the 21°C criterion. 9-DDD004.75 records one excursion at 21.9°C on 7/28/99. The extension of the impairment to the mouth of the West Fork of Dodd Creek is in recognition of these data and temperature exceedences on the West Fork of Dodd Creek.

Dodd Creek	Estuary	Reservoir	River
Aquatic Life	(Sq. Miles)	(Acres)	(Miles)
Temperature, water - Total Impaired Size by Water Type:			6.28

Sources:  
Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N21R-01-BAC** Little River (Lower)

Location: The upper limit begins at the confluence of the West Fork Little River (N19R) extending downstream to the Little River mouth on the New River (N21R).

City / County: Floyd Co. Montgomery Co. Pulaski Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

Fecal Coliform / 5A

Exceedences of the former WQS fecal coliform (FC) bacteria instantaneous criterion of 1000 cfu/100 ml required the initial 2002 bacteria 303(d) Listing based on data from the United States Geological Survey (USGS) station 03170000. Two of 14 observations exceeded the former instantaneous criterion. Application of the existing 400 cfu/100 ml instantaneous criterion would result in four of 14 exceedences above the criterion ranging from 420 to 14,900 cfu/100 ml. Due to the previous 2002 1.35 mile riverine 303(d) Listing from Meadow Creek confluence downstream to the backwaters of Little River Reservoir and 2004 bacteria results from 9-LRV000.34 the riverine impairment is extended 0.48 miles downstream. The impounded waters (60.44 acres) of Little River Reservoir are now bacteria impaired and incorporated with the 2008 Integrated Report (IR) as described below.

The 2004 IR establishes a 13.33 mile bacteria impairment at 9-LRV032.72 where three of eight fecal coliform bacteria observations exceed the WQS 400 cfu/100 ml instantaneous criterion within the 2004 data window. Exceedences range from 600 to 1100 cfu/100 ml. The 2004 303(d) List describes the impaired extent from the end of Rt. 706 downstream to the confluence of Sidney Creek. This 2004 portion of Little River is separate from the original 2002 bacteria 303(d) Listing because of hydrology and the lack of bacteria data between the two initial listings on the mainstem of Little River.

Additional bacteria sample collection within the 2008 data window defines the entire 39.05 mile impairment below. Future assessment and 303(d) Listings will replace fecal coliform with Escherichia coli (E.coli) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-LRV044.49 (Rt. 615 Bridge) E.coli exceedences are found in three of 11 observations within the 2008 data window. Exceeding values greater than the instantaneous criterion of 235 cfu/100 ml range from 380 to greater than 2000 cfu/100 ml. Two exceedences from eight E.coli observations exceed the instantaneous criterion in 2006. Exceeding values are 380 and 450 cfu/100 ml.

9-LRV032.72 (Rt. 617 Bridge) There are no additional data beyond the 2006 IR where four of 11 FC observations exceed the WQS 400 cfu/100 ml instantaneous criterion. Exceedences range from 600 to 3,300 cfu/100 ml. The same total observations and exceedences are found within the 2008 data window.

9-LRV016.68 (Rt. 787 Bridge) Two of 10 FC samples exceed the instantaneous criterion within both the 2006 and 2008 data windows. Each excursion is 900 and greater than 8000 cfu/100 ml. There are no additional beyond the 2006 IR. The same total observations and exceedences are found within the 2008 data window.

9-LRV009.11 (Route 693 Bridge at Graysontown) Data within both the 2006 and 2008 IRs reveal FC exceeds the instantaneous criterion in two of 11 samples at 500 and 600 cfu/100 ml. The same total observations and exceedences are found within the 2008 data window. Note: USGS 03170000 (Little R. at Graysontown) an original 2002 listing station is at the same location.

9-LRV000.44 (Above Little River Dam) E.coli exceed the 235 cfu/100 ml instantaneous criterion in two of seven observations. Exceeding values are 420 and 1000 cfu/100 ml.

9-LRV000.34 (Route 605 Bridge- below Little River Dam) Data within the 2008 data window find four of 14 FC samples in excess of the 400 cfu/100 ml FC criterion. The range of exceedence is from 500 cfu/100 ml to 7300. The same four exceeding values are found in the 2006 IR from 20 FC observations.

Little River (Lower)

Recreation

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

60.44

3.66

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Little River (Lower)			
Recreation		Estuary (Sq. Miles)	Reservoir (Acres)
			River (Miles)
Fecal Coliform - Total Impaired Size by Water Type:			39.05

### Sources:

Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Unspecified Domestic Waste	Wet Weather Discharges (Non-Point Source)
Wildlife Other than Waterfowl			

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N21R-01-BEN**      **Little River**

Location: Little River from the mouth of the West Fork of Little River downstream to the confluence of Sidney Creek.

City / County: Floyd Co.                      Montgomery Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2008 assessment finds the Aquatic Life Use is impaired due to impacts to the benthic community for 16.99 miles.

9-LRV035.03- (Upstream of Laurel Fork Mouth) Bio 'IM' Two 2004 Virginia Stream Condition Index (VSCI) surveys with an average score of 57.7. Spring score is 52.2 and fall 62.1. There is less taxonomic diversity in the fall sample, but it included a higher percentage of pollution sensitive organisms. In-stream habitat impacts include sediment deposition and lack of diversity in substrate and cover available for fish and benthic macroinvertebrates. The riparian buffer on one bank was impacted by hay fields. Approximately 40% of the land cover upstream of this station is agriculture, potentially impacting the amount of sediment getting into the river.

Little River	Estuary	Reservoir	River
<b>Aquatic Life</b>	(Sq. Miles)	(Acres)	(Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			<b>16.99</b>

Sources:

Loss of Riparian Habitat      Sediment Resuspension  
(Clean Sediment)

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N21R-02-BAC** Meadow Creek

Location: The Meadow Creek mainstem from the Mill Creek confluence downstream to the Meadow Creek mouth on Little River (Radford South Quad).

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

Fecal coliform excursions of the former 1000 cfu/100 ml instantaneous criterion found in 2002 results in the initial 303(d) Listing of these waters for 4.49 miles. Exceedences are found in three of four observations and one geometric mean calculation exceedence is recorded. Additional sample collections within the 2004 IR data window also produce exceedences of the current 400 cfu/100 ml criterion in seven of 12 observations with one geometric mean excursion. Future assessment and 303(d) Listings will replace fecal coliform (FC) with Escherichia coli (E.coli) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-MDW004.62- There are no additional data beyond the 2006 IR where FC exceedences of the WQS 400 cfu/100 ml instantaneous criterion are found in six of 11 observations. The range of exceeding values is from 700 to >8000 cfu/100 ml. FC exceedences and total observations within the 2008 data window are the same.

Meadow Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			4.49

### Sources:

Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Unspecified Domestic Waste	Wet Weather Discharges (Non-Point Source)
Wildlife Other than Waterfowl			



# Appendix A - List of Impaired (Category 5) Waters in 2008\*

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## New River Basin

Cause Group Code **N21R-03-BAC**

**Mill Creek, Poplar Branch, Mill Creek UTs (XDE & XDF)**

Location: The upper limit begins at the headwaters of Mill Creek on the Riner Quad and extends downstream to the Mill Creek confluence with Meadow Creek at the Rt. 600 Bridge on the Radford South Quad (7.04 miles). This impairment also includes Poplar Branch and its tributaries from its mouth on Mill Creek to its headwaters as well as to unnamed tributaries to Mill Creek (XDE & XDF).

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /

VA Category: Fecal Coliform / 4A

The Mill Creek Bacteria TMDL Study is complete and US EPA approved on 6/05/2002 [FED ID 9453 / 19986]. SWCB approved 6/17/2004 (formerly VAW-N21R-03). The Bacteria Implementation Plan is complete (1/2007) and awaits SWCB approval. The 1996 / 2002 / 2004 impaired waters now extend to the headwaters of Mill Creek (7.04 miles). 2002 tributary additions include Poplar Branch (4.57 miles) and two unnamed tributaries (XDE 1.72 miles and XDF 1.91 miles). The waters are impaired for a total of 15.25 miles.

The waters are originally 303(d) Listed based on the former fecal coliform (FC) WQS instantaneous criterion of 1000 cfu/100 ml and 200 geometric mean. The 2004 Integrated Report (IR) records exceedences of both the current FC 400 cfu/100 ml instantaneous criterion and geometric mean criterion of 200 cfu/100 ml. Listed below are the monitored sites showing fecal coliform instantaneous excursions / with total sample collections; (maximum) and geometric mean calculation exceedences / with total calculations where applicable. Instantaneous *Escherichia coli* (E. coli) single observations are listed next (value). Each exceed the WQS instantaneous criterion of 235 cfu/100 ml.

Data below reflect the 2004, 2006 and 2008 IR data windows as there are no additional data beyond the 2006 IR. Two ambient fixed sites 9-MLC005.44 and 9-MLC001.53 are included with the non-fixed sites below. Future assessment and 303(d) Listings will replace fecal coliform with *Escherichia coli* (E.coli) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

### 2004 IR results:

#### Mill Creek

9-MLC000.17 (Rt. 600 Bridge) - 3/5; (3900); 1/1 geomean; E.coli- 1/1 (800).  
9-MLC001.31 (Rt. 693 Bridge) - 3/5; (2300); 1/1 geomean; E.coli- 1/1 (800).  
9-MLC001.53 (Rt. 693, Childress) - 3/6; (2300).  
9-MLC002.74 (Rt. 669 Bridge) - 4/5; (>8000); 1/1 geomean; E.coli- 1/1 (800).  
9-MLC005.44 (Rt. 8 Bridge-above Riner STP)- 18/25; (2500); E.coli- 1/1 (800).  
9-MLC006.00 (Private road Rt. 616)- 2/5; (>8000); 0/1 geomean; E.coli- 1/1 (>800).

#### Poplar Branch

9-PPL000.01 (Private Road at mouth)- 1/1; (>8000).  
9-PPL001.27 (Rt. 616 Bridge)- 2/2 (2800).

#### Mill Creek Unnamed Tributaries

9-XDE000.95 (Rt. 678 Bridge)- 4/5; (>8000); 1/1 geomean; E.coli- 1/1 (>800).  
9-XDF000.11 (Private road Rt. 669)- 4/5;(2600); 1/1 geomean; E.coli- 1/1 (>800).

### 2006 IR results for 2006 stations within the data window:

#### Mill Creek

9-MLC005.44- 2006 FC exceeds the instantaneous criterion in 10 of 15 observations. Exceeding values range from 600 to 2000 cfu/100 ml. 2008 FC exceeds in eight of 11 samples.  
9-MLC002.74- 2006 FC exceeds the WQS 400 cfu/100 ml instantaneous criterion in 10 of 12 observations. The maximum exceedence is greater than 8000 and the minimum is 500 cfu/100 ml. 2008 FC exceeds in nine of 11 observations.  
9-MLC001.53- 2006 FC excursions are found in five of eight samples with a maximum of 2300 cfu/100 ml. 2008 five of eight FC samples exceed.

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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Mill Creek, Poplar Branch, Mill Creek UTs (XDE & XDF)	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			15.25

Sources:

Livestock (Grazing or Feeding Operations)	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Unspecified Domestic Waste	Wet Weather Discharges (Non-Point Source)
Wildlife Other than Waterfowl			

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N21R-05-BAC**

**Brush Creek**

Location: Brush Creek from the first bridge on Route 617 south of the junction of Routes 617 and 601 downstream to the Brush Creek mouth on Little River.

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /

VA Category: Fecal Coliform / 5A

The 2004 Recreational Use impairment continues for 5.76 miles due to fecal coliform (FC) bacteria exceedences. Future assessment and 303(d) Listings will replace fecal coliform (FC) with Escherichia coli (E.coli) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-BSH000.05 (Rt. 617 Bridge) The WQS instantaneous criterion of 400 cfu/100 m for FC exceeds in five of 10 samples. The maximum exceedence range is from 700 to 1300 cfu/100 ml. The 2006 IR produced the same results. There are no E.coli data to assess.

Brush Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Fecal Coliform - Total Impaired Size by Water Type:

**5.76**

### Sources:

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N21R-06-BAC**

**Laurel Creek**

Location: Laurel Creek mainstem from its headwaters NW of the Routes 608 and 673 intersection downstream to its confluence with Little River.

City / County: Floyd Co.

Use(s): Recreation

Cause(s) /

VA Category: Fecal Coliform / 5A

Fecal coliform (FC) bacteria exceedences cause this 2004 303(d) Listed water to not support the Recreational Use for 3.26 miles. Future assessment and 303(d) Listings will replace fecal coliform with Escherichia coli (E.coli) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-LLL000.05- Both the 2006 and 2008 Integrated Reports (IR) find FC exceeds the WQS 400 cfu/100 ml instantaneous criterion in five of 10 samples. The exceedences range from 600 to 2800 cfu/100 ml.

Laurel Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Fecal Coliform - Total Impaired Size by Water Type:

**3.26**

Sources:

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wastes from Pets

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N21R-07-TEMP**      **Big Indian Creek**

Location: Big Indian Creek mainstem from approximately 0.5 miles upstream of the West Fork Big Indian Creek mouth downstream to the Big Indian Creek confluence with Little River.

City / County: Floyd Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Temperature, water / 5C

The 2004 Aquatic Life Use impairment continues for 7.56 miles due to temperature exceedences.

9-BIC000.14 (Rt. 787 Bridge) Both the 2006 and 2008 Integrated Reports (IR) find temperature excursions of the WQS stockable trout water criterion of 21°C occur in two of 11 measurements. The excursions are 23.9 °C on 7/11/01 and 23.2 °C on 7/10/02.

Big Indian Creek	Estuary	Reservoir	River
<b>Aquatic Life</b>	(Sq. Miles)	(Acres)	(Miles)
Temperature, water - Total Impaired Size by Water Type:			<b>7.56</b>

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N22R-02-BAC**

### Stroubles Creek

Location: The upstream end is at the Duck Pond dam on the southwest end of the VPI&SU campus on the Blacksburg Quad. The downstream end is at the Walls Branch mouth on Stroubles Creek.

City / County: Montgomery Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

Fecal coliform (FC) bacteria exceedences of the former 1000 cfu/100 ml WQS instantaneous criterion in 2002 cause impairment of the recreational use. Three of 23 observations exceed the former criterion at station 9-STE002.41 Rt. 705 Bridge (Coal Hollow Road). The 2004 IR at 9-STE002.41 records four exceedences from 35 samples in excess of the current 400 cfu/100 ml WQS instantaneous criterion. Escherichia coli (E.coli) bacteria replaced fecal coliform (FC) in 2006 as the indicator as required by Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters]. E.coli exceedences at 9-STE002.41 are three of 31 samples and this 2.10 mile portion is delisted (partial - length) with the 2008 assessment. The 4.98 mile remaining 2002 bacteria impairment continues.

9-STE007.29 (Rt. 657 Bridge below old B'Burg STP) 2008 E.coli results find five exceed the 235 cfu/100 ml instantaneous criterion from a total of 25 samples. The 2008 exceedence range is from 300 to greater than 2000 cfu/100 ml. 2006 E.coli samples reveal five exceed the instantaneous criterion from a total of 16 samples. Exceeding values range from 490 to greater than 5000 cfu/100 ml.

Stroubles Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**4.98**

#### Sources:

Discharges from Municipal  
Separate Storm Sewer  
Systems (MS4)

Livestock (Grazing or  
Feeding Operations)

Municipal (Urbanized High  
Density Area)

Unspecified Domestic Waste

Wastes from Pets

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N22R-02-BEN**

### Stroubles Creek

Location: These mainstem waters extend from the Walls Branch mouth upstream to the Duck Pond located on the VPI&SU Campus.

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

The Stroubles Creek General Standard (Benthic- Sediment) TMDL is complete and US EPA approved on 1/28/2004 [FED ID: 21904]. The SWCB approved the Study on 6/17/2004. The Benthic (Sediment) Implementation Plan is SWCB approved (9/27/2006) (formerly VAW-N22R-02). The 1996 303(d) Listed 4.98 mile waters remain impaired for contravention of the General Standard (Benthic).

9-STE007.29- Bio 'IM' Six Virginia Stream Condition Index (VSCI) surveys (2001 - 2003 & 2006) with an average score of 45.6. The pollution tolerant caddisfly family Hydropsychidae is nearly dominant in all spring and fall surveys, showing the benthic community is dominated by organisms that feed on suspended organic matter in both seasons. Thus, this stream reach shows evidence of yearlong organic enrichment. The midge family, Chironomidae was dominant in the spring of 2002. These organisms are tolerant of organic enrichment as well as low dissolved oxygen environments. Habitat condition is suboptimal, impacted by sediment and poor riparian vegetation zones. The mostly open canopy allows for increased water temperatures and primary production resulting in large mats of algae and bacteria on the stream substrate during the summer and fall.

Stroubles Creek

**Aquatic Life**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:

**4.98**

#### Sources:

Discharges from Municipal  
Separate Storm Sewer  
Systems (MS4)

Livestock (Grazing or  
Feeding Operations)

Municipal (Urbanized High  
Density Area)

Sediment Resuspension  
(Clean Sediment)

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N22R-03-BAC**

### Back Creek

Location: The waters extend from 0.70 miles below the Rt. 636 Bridge crossing downstream to Back Creek's mouth on the New River.

City / County: Pulaski Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 4A

The 1996 303(d) Listed Back Creek Bacteria TMDL Study is complete and US EPA approved on 6/21/2004 [FED ID 24564]. The Study achieved SWCB approval on 12/02/2004. The Bacteria/Benthic Implementation Plan is complete (7/2007) and awaits SWCB approval (formerly VAW-N22R-03). 1996 fecal coliform (FC) exceedences are found in seven of seven observations at 9-BCK009.47; 2002 records 17 of 23 samples exceeding the former fecal coliform bacteria instantaneous criterion of 1000 cfu/100 ml. The 2004 Integrated Report (IR) records 19 of 21 samples exceeding the current fecal coliform bacteria instantaneous criterion of 400 cfu/100 ml at 9-BCK009.47. The excursions range from 900 to >8000 cfu/100 ml. Escherichia coli (E.coli) bacteria replaced fecal coliform in 2006 as the indicator as required by Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters]. The waters remain impaired for 16.38 miles with the 2008 Assessment.

9-BCK015.98 (Rt. 636 Bridge, Black Hollow Road) The 2008 assessment finds E.coli exceeds the instantaneous criterion of 235 cfu/100 ml in 19 of 26 total samples. Values in excess of the criterion range from 250 to greater than 2000 cfu/100 ml. In 2006 E.coli samples exceed the instantaneous criterion 11 of 14 total samples with the same exceedence range.

9-BCK009.47 (Rt. 100 Bridge) E.coli exceeds the WQS instantaneous criterion in 32 of 35 samples in 2008. The range of exceeding values is from 310 cfu/100 ml to 18,000. Two of two geometric mean calculations exceed the 126 cfu/100 ml criterion. The 2006 assessment found E.coli exceeds the instantaneous criterion in 20 of 21 samples with the same exceedence range.

9-BCK000.74 (Rt. 600 Bridge) The 2008 assessment finds E.coli exceeds the instantaneous criterion in 23 of 36 samples with exceedences ranging from 290 cfu/100 ml to greater than 2000. Three of three geometric mean calculations exceed the 126 cfu/100 ml criterion. The exceedence range in 2006 is the same where E.coli exceeds in 15 of 22 samples.

Back Creek

Recreation

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**16.38**

#### Sources:

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wastes from Pets

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl



# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N22R-03-BEN**

**Back Creek**

Location: The waters extend from 0.70 miles below the Rt. 636 Bridge crossing downstream to the Shuffle Branch mouth on Back Creek.

City / County: Pulaski Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

The 2002 303(d) Listed Back Creek General Standard (Benthic- Sediment) TMDL Study is complete and US EPA approved on 6/21/2004 [FED ID: 24565]. The SWCB approved the Study on 12/02/2004. The TMDL study identifies sediment as the primary stressor for the aquatic life use (benthic) impairment. The Bacteria/Benthic Implementation Plan is complete (7/2007) and awaits SWCB approval. The 2002 severe RBP II score of 37.50 produces the initial 16.38 mile listing of the benthic impairment. The 2008 assessment finds via station 9-BCK000.74 that a single Virginia Stream Condition Index (VSCI) score indicates full support. A potential delisting could occur for the lower end of Back Creek should additional surveys produce scores at 60 or above in succeeding assessment cycles.

9-BCK015.98- (Rt. 636 Bridge, Black Hollow Road) Bio 'IM' Two 2006 Virginia Stream Condition Index (VSCI) surveys with an average score of 42.8. The habitat surveys indicate the stream is impacted by sediment deposition, riparian vegetation removal, channel alteration (straightening of the stream), and destabilized stream banks. Additionally, the water in Back Creek is often turbid from cattle disturbance of stream banks and in-stream sediments. These impacts result in stream substrate and water that limits colonization of benthic macroinvertebrates and fish.

9-BCK009.47 (Rt. 100 Bridge) Bio- 'IM'; Three VSCI surveys (2003 & 2006) with an average score of 41.0 The benthic community is dominated by taxa tolerant of nutrient/organic enrichment. NPS pollution from agricultural sources upstream from Rt. 100 has impacted the stream. Habitat has been impacted by the agricultural land use in the watershed, resulting in sedimentation and excessive algal growth on the substrate.

9-BCK000.74- (Rt. 600 Bridge) Bio- 'FS' One fall 2003 VSCI survey scoring 67.2. This AU would be a candidate for delisting in 2010 should additional surveys find scores above 60. The reach appears to have habitat that would suit a diverse benthic community and was surveyed to determine if it was a recovery zone from upstream impairments. However, this station had a low abundance of sensitive EPTs. The high dominance of Elmidae (53.3%) is possibly due to slight nutrient enrichment and the subsequent abundance of periphyton, which is the predominant food of riffle beetles. This station is slightly impacted by sediment deposition. The banks and riparian zones are impacted by altered hydrology and human activities. However, the substrate size, frequency of riffles, flow, velocity, and channel gradient have a positive effect on the benthic community.

Back Creek

**Aquatic Life**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:

**16.38**

Sources:

Channelization

Loss of Riparian Habitat

Sediment Resuspension  
(Clean Sediment)

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N22R-04-TEMP**      **Toms Creek**

Location: Toms Creek mainstem waters just below the Poverty Creek confluence upstream to the mouth of Big Run.

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Temperature, water / 5C

The Aquatic Life Use is impaired for 5.23 miles based on 2008 temperature exceedences of the Class V stockable trout water criterion.

9-TOM005.32- (Rt. 725 Bridge upstream of Poverty Creek) Two temperature measurements exceed the Class V 21°C criterion from 13 observations. Exceedences occur on 8/15/2005 at 24.4°C and 21.4 °C on 8/15/2006.

Toms Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Temperature, water - Total Impaired Size by Water Type:			<b>5.23</b>

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N22R-05-BEN**      **Slate Branch**

Location: Slate Branch from its mouth on Stroubles Creek upstream to its headwaters.

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The Aquatic Life Use is impaired for excursion of the WQS General Standard (Benthic) for 6.55 miles in these 2008 303(d) Listed waters.

9-SLT000.50- (Route 659 Bridge - Mont. Co.) Bio 'IM' Two 2006 Virginia Stream Condition Index (VSCI) surveys with an average score of 46.1. Differences between spring and fall scores appear to be a slight recovery in mayfly taxa and abundance between spring and fall along with a large decrease in the abundance of scrapers. The spring sample was dominated by water pennies (Psephenidae) which feed by scraping substrate for food; whereas, the fall sample was dominated by net-spinning caddis (Hydropsychidae) which feed by filtering organic matter from the current. The abundance of organisms in the spring sample was very low relative to the reference site (Falling Branch). The abundance increased in the fall and was comparable to the reference site.

Slate Branch	Estuary	Reservoir	River
<b>Aquatic Life</b>	(Sq. Miles)	(Acres)	(Miles)
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			<b>6.55</b>

Sources:

Industrial/Commercial Site Stormwater Discharge (Permitted)	Loss of Riparian Habitat	Municipal (Urbanized High Density Area)	Residential Districts
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N22R-06-BEN**

**Unnamed Tributaries XEJ and XEH to Slate Branch**

Location: Unnamed Tributary XEH from its mouth on Slate Branch upstream to its headwaters. And Unnamed Tributary XEJ from its mouth on Unnamed Tributary XEH upstream to its headwaters.

City / County: Montgomery Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 5A

The 2008 assessment finds the Aquatic Life Use via the General Standard (Benthic) is impaired for a total of 2.64 miles. Unnamed Tributary to Slate Branch- XEH for 1.79 miles and Unnamed Tributary XEJ to XEH for 0.85 miles.

9-XEH000.75- (Downstream of Villages Development at NRV Mall) Bio 'IM' Two 2006 Virginia Stream Condition Index (VSCI) surveys with an average score of 23.1. This station was sampled at the request of the WCRO VWP program with the goal of collecting water quality data prior to new development immediately upstream near the New River Valley Mall complex. A crayfish/macroinvertebrate kill in January 2006 impacted the stream with the source occurring somewhere above this station. The most noticeable difference between this site and the reference station is the low abundance of organisms collected in the spring sample compared to the reference site. The abundance increased in the fall and is comparable to the reference site (Falling Branch).

9-XEJ000.10- (North of NRV Mall) Bio 'IM' Two 2006 VSCI surveys with an average score of 23.8. This station was sampled at the request of the WCRO VWP program with the goal of collecting water quality data prior to new development immediately upstream and north of the New River Valley Mall and above the Huckleberry Tail crossing. The main source of impact appears to be recent development and urban land use resulting in altered hydrology, excessive stormwater runoff, sediment deposition, bank erosion, and riparian vegetation removal.

Unnamed Tributaries XEJ and XEH to Slate Branch

**Aquatic Life**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:

**2.64**

Sources:

Loss of Riparian Habitat

Municipal (Urbanized High  
Density Area)

Sediment Resuspension  
(Clean Sediment)

Streambank  
Modifications/destabilization

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N24R-01-DDE**      **New River**

Location: New River mainstem waters from the confluence of Sinking Creek downstream the mouth of Stony Creek.

City / County: Giles Co.

Use(s): Fish Consumption

Cause(s) /  
VA Category: DDE / 5A

This 2004 303(d) Listing for 9.61 miles is the result of WQS based fish tissue exceedences.

9-NEW050.70 (New River near Pembroke) 2001 fish tissue collection - Two Carp exceed the WQS based Tissue Value (TV) for DDE of 320 ppb at 355 and 326 ppb from two Carp analyzed.

New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Fish Consumption</b>			
DDE - Total Impaired Size by Water Type:			<b>9.61</b>

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N24R-01-DDT**      **New River**

Location: New River mainstem waters from the confluence of Sinking Creek downstream the mouth of Stony Creek.

City / County: Giles Co.

Use(s): Fish Consumption

Cause(s) /  
VA Category: DDT / 5A

This 2004 303(d) Listing for 9.61 miles is the result of WQS based fish tissue exceedences.

9-NEW050.70 (New River near Pembroke) 2001 fish tissue collection- Two Carp exceed the WQS based Tissue Value (TV) for DDT of 320 ppb at 359 and 373 ppb from two Carp analyzed. Formerly Listed VAW-N22R-01 for DDT 2004.

New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Fish Consumption</b>			
DDT - Total Impaired Size by Water Type:			<b>9.61</b>

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N24R-01-HEPOXID**    **New River**

Location: New River mainstem waters from the confluence of Sinking Creek downstream the mouth of Stony Creek.

City / County: Giles Co.

Use(s): Fish Consumption

Cause(s) /

VA Category: Heptachlor epoxide / 5A

This 2004 303(d) Listing for 9.61 miles is the result of WQS based fish tissue exceedences.

9-NEW050.70 (New River near Pembroke) 2001 fish tissue collection- Two Carp exceed the WQS based Tissue Value (TV) for heptachlor epoxide of 10 ppb at 54 ppb each from two Carp analyzed. Heptachlor epoxide moved from Risk based to WQS TV based with 2006 Integrated Report (IR).

New River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Fish Consumption</b>			
Heptachlor epoxide - Total Impaired Size by Water Type:			<b>9.61</b>

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N25R-01-BAC**

**Walker Creek**

Location: Walker Creek from the Rt. 52 crossing downstream the confluence of Walker Creek on the New River

City / County: Bland Co.

Giles Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

Fecal Coliform / 5A

The 2006 Integrated Report (IR) initially found 68.07 miles impaired for bacteria. Escherichia coli (E.coli) replaces fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters]. This fact sheet describes the lower half (34.92 miles) of the bacteria impairment.

9-WLK058.04 (Bridge #6011 on Rt. 604 near Bland) The bacteria impairment remains as there are no additional data beyond the 2006 IR where two of 12 FC samples exceed the 400 cfu/100 ml WQS instantaneous criterion. Each exceedence is 700 and 800 cfu/100 ml.

9-WLK044.06 (Rt. 738 Bridge 0.5 mi. S. of Mechanicsburg) E.coli exceed the 235 cfu/100 ml instantaneous criterion in three of nine samples. Exceeding values range from 275 cfu/100 ml to greater than 2000. Both the 2006 and 2008 assessments are based on these data.

9-WLK004.34 (Route 622 Bridge - Giles Co.) Two of 12 E.coli samples exceed the instantaneous criterion in 2008 where both exceeding values are greater than 800 cfu/100 ml. The 2006 IR reports two of nine excursions with the same exceeding values.

Walker Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**68.05**

Walker Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Fecal Coliform - Total Impaired Size by Water Type:

**33.13**

Sources:

Animal Feeding Operations  
(NPS)

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl



# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N26R-01-BAC** Kimberling Creek

Location: This segment begins at the confluence with Nobusiness Creek and continues downstream to the confluence with Walker Creek.

City / County: Bland Co. Giles Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The AWQM station located at 9-KBL001.67 had a 17% exceedence of the bacteria standard.

Kimberling Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Fecal Coliform - Total Impaired Size by Water Type:			<b>9.18</b>

Sources:

- Animal Feeding Operations  
(NPS)
- Natural Conditions - Water  
Quality Standards Use  
Attainability Analyses  
Needed

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N27R-01-BAC**

**Little Walker Creek**

Location: Little Walker Creek mainstem from its confluence with Walker Creek upstream to the mouth of Spur Branch.

City / County: Pulaski Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

The initial 2004 303(d) Listing of these waters is the result of fecal coliform (FC) bacteria exceedences (two exceeding from 18 observations) causing a 17.16 mile impairment. Escherichia coli (E.coli) replaces fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-LWK000.77 (Rt. 100 Bridge) The 2008 assessment finds E.coli exceed the 235 cfu/100 ml instantaneous criterion in five of 12 samples. Values exceeding the criterion range from 320 to 500 cfu/100 ml. Four of nine excursions are reported in 2006 with the range of exceedence from 350 to 500 cfu/100 ml.

Little Walker Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**17.16**

Sources:

Livestock (Grazing or  
Feeding Operations)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N29R-01-PCB**

**New River, Claytor Lake, Peak Creek and Reed Creek**

Location: The impairment begins at the I-77 bridge crossing the New River and extends downstream to the VA/WVA State Line and includes the tributaries Peak Creek and Reed Creek as described below.

City / County: Giles Co.

Montgomery Co.

Pulaski Co.

Radford City

Wythe Co.

Use(s): Fish Consumption

Cause(s) /

VA Category: PCB in Fish Tissue / 5A

The Virginia Department of Health (VDH) issued a fish consumption advisory on August 6, 2001 for polychlorinated biphenyls (PCBs) for the lower portion of the New River (Rt. 114 Bridge downstream to the VA / WVA State Line - 52.0 miles) based on fish tissue collections from Carp. An Advisory extension to Claytor dam was issued 8/06/2003 (11.47 miles) recommends that no carp be consumed in these waters and no more than two meals per month of flathead and channel catfish. The VDH PCB Fish Consumption Advisory was further extended upstream on the New River (13 miles) to the I-77 Bridge to include the lower portions of Peak Creek (4.95 miles), Reed Creek (16.35 miles) and Claytor Lake (4,287 acres) on 12/02/2004. The VDH advises consumption should not exceed two meals per month for carp and smallmouth bass. The VDH level of concern is 50 parts per billion (ppb) in fish tissue.

There are eight fish tissue collection sites within the 2008 data window reporting exceedences of the WQS based 54 ppb fish tissue value (TV). These data are reviewed by the VDH in making an advisory determination. A complete listing of collection sites and associated fish tissue data are available at <http://www.deq.virginia.gov/fishtissue/fishtissue.html>. A more detailed presentation of the data can also be found using an interactive mapping application at <http://gisweb.deq.state.va.us/>. The VDH Advisory information is also available via the web at <http://www.vdh.virginia.gov/Epidemiology/PublicHealthToxicology/Advisories/>.

New River, Claytor Lake, Peak Creek and Reed Creek

**Fish Consumption**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

PCB in Fish Tissue - Total Impaired Size by Water Type:

**4,286.76**

**90.15**

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N30R-01-BAC**      **Wolf Creek**

Location: This segment extends from the Burkes Garden Creek confluence downstream to the lower segment below the Hunting Camp Creek confluence.

City / County: Bland Co.      Tazewell Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A      Fecal Coliform / 5A

The AWQM station located at 9-WFC032.45 had a 15% exceedence of the fecal coliform water quality standard and station 9-WFC039.16 had a 33% exceedence of the E.coli water quality standard.

Wolf Creek	Estuary	Reservoir	River
<b>Recreation</b>	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			<b>26.87</b>
Wolf Creek	Estuary	Reservoir	River
<b>Recreation</b>	(Sq. Miles)	(Acres)	(Miles)
Fecal Coliform - Total Impaired Size by Water Type:			<b>8.98</b>

Sources:

Animal Feeding Operations (NPS)	Grazing in Riparian or Shoreline Zones	Livestock (Grazing or Feeding Operations)
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N31R-01-BAC**      **Hunting Camp Creek**

Location: This segment extends from the confluence with Wolf Creek, upstream through the community of Bastian to an impoundment, river mile 8.50.

City / County: Bland Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 4A

The AWQM station located at 9-HCC001.40 had a 27% exceedence of the bacteria water quality standard. Station 9-HCC005.57 had a 26% exceedence of the bacteria water quality standard.

Hunting Camp Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>8.45</b>

Sources:

Animal Feeding Operations (NPS)	Livestock (Grazing or Feeding Operations)	Loss of Riparian Habitat
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N31R-01-BEN**      **Hunting Camp Creek**

Location: This segment extends from the confluence with Wolf Creek, upstream through the community of Bastian to an impoundment, river mile 8.50.

City / County: Bland Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

The temperature violations in this segment are attributed to loss of riparian vegetation from livestock access to the stream and are addressed in the TMDL that is complete.

Hunting Camp Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			<b>8.45</b>

Sources:

Animal Feeding Operations (NPS)	Livestock (Grazing or Feeding Operations)	Loss of Riparian Habitat
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N31R-01-TEMP**      **Hunting Camp Creek**

Location: This segment extends from the confluence with Wolf Creek, upstream through the community of Bastian to an impoundment, river mile 8.50.

City / County: Bland Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Temperature, water / 5A

The temperature violations in this segment are attributed to loss of riparian vegetation from livestock access to the stream and are addressed in the TMDL that is complete.

Hunting Camp Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Temperature, water - Total Impaired Size by Water Type:			<b>8.45</b>

Sources:

Grazing in Riparian or      Loss of Riparian Habitat  
Shoreline Zones

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N32R-01-BAC**

**Wolf Creek**

Location: Wolf Creek mainstem waters from the mouth of Clear Fork Creek downstream to the confluence of Wolf Creek with the New River.

City / County: Bland Co.

Giles Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 5A

The originally listed 2004 portion of the overall extent described above began near the intersection of Routes 61 and 724 at the confluence of an unnamed tributary extending downstream to the mouth of Wolf Creek on the New River. A total of 5.51 miles.

The 2006 Integrated Report (IR) extends The 2004 303(d) Listed fecal coliform (FC) bacteria impairment 16.42 miles upstream. The total bacteria impairment is 21.93 miles. Future assessment and 303(d) Listings will replace fecal coliform (FC) bacteria with Escherichia coli (E.coli) as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-WFC017.31 (Bridge #6065 on Rt. 644 off Rt. 61) The 2008 assessment finds Two of 12 E.coli samples exceed the 235 cfu/100 ml criterion at 420 and 1000 cfu/100 ml. Two of nine E.coli samples exceed the criterion with the same exceedences in 2006.

9-WFC011.05- (Rt. 676 Bridge at Boxely) 2008 E.coli results exceed the instantaneous criterion in two of 10 samples. Exceeding values are both at 700 cfu/100 ml.

9-WFC005.61 (Rt. 673 Bridge at Penvir) E.coli exceedences are found in five of 12 samples in 2008. Values in excess of the 235 cfu/100 ml criterion range from 250 to greater than 2000. E.coli exceedences are found in three of nine samples and the same range of exceedence as in 2008.

9-WFC000.20 (Rt. 61 Bridge) E.coli exceeds the 235 cfu/100 ml instantaneous criterion in three of 12 samples in 2008. Each excursion of the criterion is 520, 900 and 1200 cfu/100 ml. E.coli excursions in 2006 are two of nine samples with each excursion of the criterion at 520 and 900 cfu/100 ml. The 2004 Integrated Report (IR) finds FC exceedences of the 400 cfu/100 ml instantaneous criterion in two of 18 samples resulting in a 2004 impairment listing that remains. Exceeding values are 700 and 1500 cfu/100 ml.

Wolf Creek

**Recreation**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Escherichia coli - Total Impaired Size by Water Type:

**21.93**

### Sources:

Livestock (Grazing or  
Feeding Operations)

Municipal (Urbanized High  
Density Area)

On-site Treatment Systems  
(Septic Systems and Similar  
Decentralized Systems)

Unspecified Domestic Waste

Wastes from Pets

Wet Weather Discharges  
(Non-Point Source)

Wildlife Other than  
Waterfowl



# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N33R-01-BAC**      **Laurel Creek**

Location: This segment extends from Wolf Creek upstream to the confluence of Dry Fork.

City / County: Bland Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A      Fecal Coliform / 5A

The AWQM station located at 9-LAC000.56 had a 33% exceedence of the bacteria water quality standard.

Laurel Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Escherichia coli - Total Impaired Size by Water Type:			1.60
Laurel Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation			
Fecal Coliform - Total Impaired Size by Water Type:			1.60

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N34R-01-BAC**      **Rich Creek**

Location: The impaired waters begin just downstream of Peterstown, West Virginia at the mouth of Brush Creek on Rich Creek and extends to the Rich Creek confluence on the New River (Peterstown, WVA Quad).

City / County: Giles Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 5A

The 2002 2.75 mile fecal coliform (FC) bacteria impairment remains. Escherichia coli (E.coli) replaces fecal coliform bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-RHC000.08 (Rt. 806 Bridge) E.coli exceed the 235 cfu/100 ml criterion in three of nine samples in 2008. Exceedences range from 400 to 900 cfu/100 ml. There are no additional data beyond the 2004 IR. The 2004 IR reports FC exceeds the 400 cfu/100 ml instantaneous criterion in 10 of 18 samples. Exceeding values range from 500 to 2800 cfu/100 ml. Data within the 2006 data window exceed the FC instantaneous criterion in five of nine samples with an exceedence range of 1000 to 2800 cfu/100 ml.

Rich Creek	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>2.75</b>

Sources:

Municipal (Urbanized High Density Area)	Unspecified Domestic Waste	Wet Weather Discharges (Non-Point Source)	Wildlife Other than Waterfowl
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# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N35R-01-BAC**      **Adair Run**

Location: The Adair Run impairment begins at the Virginia / West Virginia State Line and extends downstream to the Adair Run confluence with the New River.

City / County: Giles Co.

Use(s): Recreation

Cause(s) /  
VA Category: Fecal Coliform / 5A

The 2004 303(d) Listed 0.38 mile bacteria impaired waters find the Recreational Use is not supported. Escherichia coli (E.coli) will replace fecal coliform (FC) bacteria as the indicator as per Water Quality Standards [9 VAC 25-260-170. Bacteria; other waters].

9-ADR000.13 (Rt. 648 Bridge) There are no additional data beyond the 2004 Integrated Report (IR). The 2004 IR reports fecal coliform exceeds the 400 cfu/100 ml instantaneous criterion in six of 26 observations. Exceeding values range from 500 to 4200 cfu/100 ml. FC exceeds the 400 cfu/100 ml instantaneous criterion in six of 20 observations within the 2006 data window. Exceeding values range from 500 to 4200 cfu/100 ml. FC data within the 2008 data window find four of 14 samples exceeding the instantaneous criterion.

Adair Run	Estuary	Reservoir	River
<b>Recreation</b>	(Sq. Miles)	(Acres)	(Miles)
Fecal Coliform - Total Impaired Size by Water Type:			<b>0.38</b>

Sources:

Unspecified Domestic Waste      Wildlife Other than  
Waterfowl

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N36R-01-BAC**      **Bluestone River**

Location: This segment extends from Rt 460 bridge downstream to the political WV boundary.

City / County: Tazewell Co.

Use(s): Recreation

Cause(s) /

VA Category: Escherichia coli / 4A

Fecal Coliform / 4A

The AWQM station located at 9-BST023.05 had a 58% exceedence of the bacteria water quality standard and station 9-BST029.57 had a 26% exceedence of the fecal coliform water quality standard.

Bluestone River	Estuary	Reservoir	River
<b>Recreation</b>	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli - Total Impaired Size by Water Type:			<b>13.20</b>
Bluestone River	Estuary	Reservoir	River
<b>Recreation</b>	(Sq. Miles)	(Acres)	(Miles)
Fecal Coliform - Total Impaired Size by Water Type:			<b>2.22</b>

Sources:

Rural (Residential Areas)

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N36R-01-BEN**      **Bluestone River**

Location: This segment extends from the Wright's Valley Creek confluence downstream to N37 (Big Branch) and the mainstem, mile 21.75, downstream to the WV political boundary.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

This segment was listed based on the biological monitoring station 9-BST022.27.

Bluestone River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			<b>6.64</b>

Sources:

Rural (Residential Areas)

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N36R-01-CDANE**      **Bluestone River**

Location: This segment includes the mainstem, mile 21.75, downstream to WV political boundary; may be found on the Brammwell quad sheet.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: Chlordane / 5A

The fish tissue and sediment sampling stations at 9-BST025.71 and 9-BST023.19 had total chlordane levels detected in the sediment in 2002 above DEQ's screening value.

Bluestone River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Chlordane - Total Impaired Size by Water Type:			<b>0.59</b>

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N36R-01-PCB**

### Bluestone River

Location: This segment begins at the Rt. 460 bridge downstream to the WV political boundary. It also includes a segment of Beaverpond Creek that flows from WV into VA, sometimes under city buildings and streets and into the Bluestone River.

City / County: Tazewell Co.

Use(s): Fish Consumption

Cause(s) /

VA Category: PCB in Fish Tissue / 5A

Polychlorinated biphenyls / 5A

In April 2004 a Special Study was conducted by DEQ and USGS. An SPMD deployed at station 9-BPB000.02 indicated Total PCBs in the water column at 3700pg/l. SPMDs deployed at stations 9-BST0022.43, 9-BST0025.23 and 9-BST0028.90 indicated PCB values of 1800pg/l, 800pg/l and 230pg/l. Fish tissue and sediment stations 9-BST023.19 and 9-BST025.71 found PCBs in exceedence of DEQ's screening value in white suckers. Station 9-BST025.71 also had sediment samples that exceeded the ER-M for PCBs.

Bluestone River

**Fish Consumption**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

PCB in Fish Tissue - Total Impaired Size by Water Type:

**13.20**

Bluestone River

**Fish Consumption**

Estuary  
(Sq. Miles)

Reservoir  
(Acres)

River  
(Miles)

Polychlorinated biphenyls - Total Impaired Size by Water Type:

**2.94**

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N37R-01-BAC**      **Laurel Fork**

Location: This segment includes the mainstem from the Curran Branch confluence, rivermile 5.90, to the WV line at rivermile 1.35.

City / County: Tazewell Co.

Use(s): Recreation

Cause(s) /  
VA Category: Escherichia coli / 4A

The AWQM station located at 9-LRR001.99 had a 45% exceedence of the bacteria water quality standard.

Laurel Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Recreation</b>			
Escherichia coli - Total Impaired Size by Water Type:			<b>4.54</b>

Sources:

Sanitary Sewer Overflows      Septage Disposal  
(Collection System Failures)



# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N37R-01-BEN**      **Laurel Fork**

Location: This segment includes the Laurel Fork mainstem from the Curran Branch confluence, river mile 5.90, to the WV line at river mile 1.35 on the Anawalt and Brammwell quad sheets.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) /

VA Category: Benthic-Macroinvertebrate Bioassessments / 4A

The biology station at 9-LRR001.39 found that the segment was impaired based on the VSCI.

Laurel Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Benthic-Macroinvertebrate Bioassessments - Total Impaired Size by Water Type:			<b>4.54</b>

Sources:

Source Unknown

# Appendix A - List of Impaired (Category 5) Waters in 2008\*

## New River Basin

Cause Group Code **N37R-01-DO**      **Laurel Fork**

Location: This segment includes the Laurel Fork mainstem from the Curran Branch confluence, river mile 5.90, to WV line at river mile 1.35 on the Anawalt and Brammwell quad sheets.

City / County: Tazewell Co.

Use(s): Aquatic Life

Cause(s) /  
VA Category: Oxygen, Dissolved / 4A

The AWQM station located at 9-LRR001.39 had exceedences of the dissolved oxygen criteria.

Laurel Fork	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
<b>Aquatic Life</b>			
Oxygen, Dissolved - Total Impaired Size by Water Type:			<b>4.54</b>

Sources:

Sanitary Sewer Overflows      Septage Disposal  
(Collection System Failures)